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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gough et al.

Serial No.: 09/754,034

Filed: January 3, 2001

For: LIQUID CRYSTALLINE MATERIALS CONTAINING PERFLUOROALKYL AND ALKENYL TAIL GROUPS

: Group Art Unit: 1756

: Examiner: Wu, S.C.

: Confirmation No. 1998

CERTIFICATE OF MAILING
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage for Express Mail in an envelope addressed to: The Assistant Commissioner for Patents, Washington, D.C. 20231

4/28/03 Loretta Allemenos
Date Loretta Allemenos

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DECLARATION OF MICHAEL WAND

I hereby declare as follows:

1. That I, Michael Wand, am Vice President of Materials Research at Displaytech, Inc., Longmont, Colorado, a position I have held for 8 years. I have worked in the field of organic chemistry, specifically liquid crystals, for 21 years. A copy of my curriculum vitae is attached to this declaration.

2. That I have read and understand the above-referenced application, including the claims.

3. That all compounds claimed in the above-referenced application are synthesizable using standard techniques known to one working in the field of liquid crystals, using standard organic chemistry texts, such as March, Advanced Organic Chemistry, John Wiley & Sons or House, Modern Synthetic Reactions, W. A. Benjamin, Inc.

4. The compounds claimed in the above-referenced application contain a core structure plus two tails. The compounds are prepared by the combination of the desired core structures with the desired tails. The reaction to combine core structures with tails is easily performed by one with ordinary skill in the art of liquid crystals.

5. The core structures claimed in the above-referenced application contain aromatic or alicyclic rings, with optional substituents of halogen, CN or NO_2. Aromatic

rings in the core structures can contain heteroatoms. Alicyclic rings can contain 3 – 10 carbon atoms, and can contain an optional double bond. Alicyclic rings can also contain an O or C=O group. These core structures are easily prepared using standard organic chemistry methods and texts.

6. One tail claimed in the above-referenced application is a perfluorinated alkyl tail. These tails are easily synthesized using standard techniques, as well as the techniques exemplified in the above-referenced application.

7. The other tail claimed in the above-referenced application is an alkenyl tail. These tails are easily synthesized using standard techniques, as well as the techniques exemplified in the above-referenced application.

8. Determination of the phases exhibited by a liquid crystal composition (such as the presence of a smectic C phase and the presence of a smectic A phase) and the temperature ranges of such phases, as well as the freezing point of the composition is routine and easily performed by one with ordinary skill in the art of liquid crystals.

All statements made herein of my knowledge are true and all statements made on information and belief are believed to be true; and further, these statements are made with knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 4/25/03

Michael Wand